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PATENT APPLICATION
Docket No: 14321.69

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

)
Junji Yomoto et al.)

Serial No.: 10/531,485)

Filing Date: April 15, 2005) Art Unit

Confirmation No.: 8722)

For: LASER LIGHT SOURCE)

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OF COUNSEL

TRANSMITTAL FOR INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing and pursuant to 37 C.F.R. § 1.97 is an Information Disclosure Statement, which includes the following statements, if any, required variously by 37 C.F.R. § 1.98:

- Statement of relevance of selected cited references not in the English language which are not translated.
- Statement that selected cited references are substantially cumulative of an enclosed or previously submitted reference.
- Statement that selected cited references were previously cited by or submitted to the United States Patent and Trademark Office in a prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

A. Additional Materials Required Due to Content of Information Disclosure Statement

Transmitted are the following documents in addition to the Information Disclosure Statement as required variously under 37 C.F.R. § 1.98:

- Form PTO-1449 listing 22 references submitted for consideration.
- A copy of 21 Non-US references listed on the Form PTO-1449.
- English translations of three (3) of the references listed on the Form PTO-1449 which are not in the English language.
- Copies of the following documents from the prosecution of a previous, related application:
 - Form PTO-1449 AND INFORMATION DISCLOSURE STATEMENT; and
 - Form PTO-892

B. Additional Materials Required Due to Timing of Filing of Information Disclosure Statement

The transmitted Information Disclosure Statement is being filed within one (1) of the following four (4) time periods:

- I. Prior to the later of either three (3) months following the filing date or the mailing of a first Office Action. Accordingly, no materials other than those listed above are enclosed.
- II. Following the latter of either three (3) months following the filing date or the mailing of a first Office Action, but before the mailing of a final Office Action or a Notice of Allowance. Accordingly, to secure consideration thereof, one (1) of the following is also enclosed:
 - Promptness Certification; or
 - Check No. _____ in the amount of _____ constituting the submission fee set forth in 37 C.F.R. § 1.17(p).
- III. After the mailing of a Notice of Allowance, but before payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:
 - Promptness Certificate;
 - Petition for Consideration; and

- Check No. in the amount of ____ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).
- IV. — After payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:
- Petition to Withdraw from Issue; and
- Check No. ____ in the amount of ____ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).

C. Fees

The Commissioner is hereby authorized to charge payment of or any deficiency in the following fees associated with this communication, or to credit any overpayment thereof, to Deposit Account No. 23-3178. A duplicate copy of this letter is enclosed.

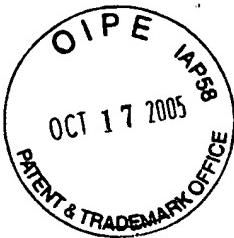
- Any fee required in relation to filing of this letter or any documents transmitted therewith.
- The submission fee set forth in 37 C.F.R. § 1.17(p) in the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that any Promptness Certificate submitted meets the requirements of 37 C.F.R. § 1.97(e).
- The submission fee set forth in 37 C.F.R. § 1.17(p).
- The petition fee set forth in 37 C.F.R. § 1.17(i)(1).

Dated this 14th day of October 2005.

Respectfully submitted,



DANA L. TANGREN
Attorney for Applicant
Registration No. 37,246
Customer No. 022913
Telephone No. 801.533.9800



PATENT APPLICATION
Docket No: 14321.69

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Junji Yomoto et al.

Serial No.: 10/531,485

Filing Date: April 15, 2005

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For: LASER LIGHT SOURCE

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INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed listed references are disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof that is not a US patent document is also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 CFR § 1.98(a)(3)

In accordance with 37 CFR § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

Japanese Patent No. 6-194343: In order to detect oxygen concentrations, a gallium-aluminum-arsenide (GAAS) laser diode 71 is used. The GAAS laser diodes can produce wavelengths in the range of 700 nm to 780 nm, and allow to tune their wavelengths over the range of several nanometers by changing their operating temperatures. By selecting a suitable GAAS laser diode from the manufactured ones, a GAAS laser diode having a wavelength in the vicinity of the 760 nm oxygen absorption band can be selected.

Japanese Patent No. 6-175180: PURPOSE: To provide an optical transmission system transmitting a signal light with high sensitivity and a low noise. CONSTITUTION: After a signal light from a semiconductor laser for a signal use transmits through an optical fiber, the signal light is multiplexed with an excitation light from a semiconductor laser for an excitation use in an optical multiplexer, coupled with an optical waveguide and converted to a sum frequency light. This sum frequency light is received by a Si light receiving device. Consequently, since the output of the signal light is converted to the sum frequency light and amplified, optical transmission with high sensitivity and a low noise is performed.

Japanese Publication No. 2002-139428: PROBLEM TO BE SOLVED: To separately measure a component having an overlapping light absorbing region and contained in a gas to be measured. SOLUTION: The concentration of the component to be measured is calculated based on the intensities of first to fourth transmitted light respectively obtained by irradiating the gas to be measured with first measuring light which is only absorbed by an interfering component having a light absorbing region overlapping that of the component, and fourth measuring light which is absorbed relatively weakly as compared with the third measuring light by the component and interfering component and first to fourth Lambert-Beer's theoretical formulae regarding the first to fourth measuring light.

Dated this 14th day of October 2005.

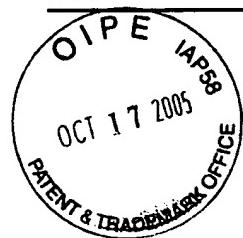
Respectfully submitted,



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Applicant: Junji Yumoto et al.
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 For: LASER LIGHT SOURCE

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 Att'y Docket No.: 14321.69
 Art Unit: 2828



INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

Examiner <u>Initial*</u>	Document <u>Number</u>	Issue <u>Date</u>	Name
____ 1	5,036,220	07/30/1991	Byer et al.

Foreign Patent Documents

Examiner <u>Initial*</u>	Document <u>Number</u>	Publication <u>Date</u>	Country or Patent Office	Translation
____ 2	6-194343	07/15/1994	Japan	No
____ 3	4-507299	12/17/1992	Japan	Yes
____ 4	6-175180	06/24/1994	Japan	No
____ 5	2002-139428	05/17/2002	Japan	No

Other Documents

(including author, title, pertinent pages, etc.)

Examiner
Initial*

- ____ 6 K. Kubo et al., *Spin and Polarization*, BAIFUKAN, October 31, 1994, pp. 21-24 (with English translation).
- ____ 7 Harold J. Metcalf et al., *Laser Cooling and Trapping*, table, Springer, 1999, pp. 274.
- ____ 8 George Patterson et al., *Fluorescent Protein Spectra*, Journal of Cell Science, No. 114, Vol. 5, 2001, pp. 837-838.
- ____ 9 Arkady F. Fradkov et al., *Far-red Fluorescent Tag for Protein Labelling*, Journal of Biochem, No. 368, 2002, pp. 17-21.

Examiner:

Date Considered:

Applicant: Junji Yumoto et al.
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- ____ 10 Dmitriy M. Chudakov, et al., *Kindling Fluorescent Proteins for Precise in Vivo Photolabeling*, Technical Report, Vol. 21, February 2003, pp. 191-194.
- ____ 11 Dirk Richter et al., *Development of an Automated Diode-Laser-Based Multicomponent Gas Sensor*, Applied Optics, Vol. 39, No. 24, August 20, 2000, pp. 4444-4450.
- ____ 12 Ioulia B. Zotova et al., *Reductions of Threshold for a Mid-Infrared Optical Parametric Oscillator by an Intracavity Optical Amplifier*, Optics Letters, Vol. 28, No. 7, April 1, 2003, pp. 552-554.
- ____ 13 Chih-Wei Hsu et al., *Broadband Infrared Generation with Noncollinear Optical Parametric Processes on Periodically Poled LiNbO₃*, Optics Letters, Vol. 26, No. 18, September 15, 2001, pp. 1412-1414.
- ____ 14 A. Yariv, *Quantum Electronics*, Third Edition, Chapter 16.5, 1988, pp. 392-397.
- ____ 15 Richard M. Schotland et al., *The Determination of the Vertical Profile of Atmospheric Gases by Means of a Ground Based Optical Radar*, Third Symposium on Remote Sensing of Environment, 1964, pp. 215-224.
- ____ 16 M. H. Chou et al., *1.5 μm-Band Wavelength Conversion Based on Cascaded Second-Order Nonlinearity in LiNbO₃ Waveguides*, IEEE Photonics Technology Letters, Vol. 11, No. 6, June 1999, pp. 653-655.
- ____ 17 Osamu Tadanaga et al., *Highly-damage-resistant Quasi-phase-matched Wavelength Converter Using ZnO-doped LiNbO₃*, Proceedings of the 15th Annual Meeting of Institute of Electrical and Electronic Engineers, Lasers and Electro-Optics Society, Vol. 1, 2002 (IEOS2002), pp. 79-80.
- ____ 18 H. Moosmuller et al., *Sum-frequency generation of Continuous-wave Sodium D₂ Resonance Radiation*, Optics Letters, Vol. 22, No. 15, August 1, 1997, pp. 1135-1137.
- ____ 19 Toshitsugu Ueda et al., *Spectroscopic Detection of Gas Using Diode-Pumped Difference-frequency Generation*, Collection of Symposium Lecture Delivered by Measurement Automatic Control Institute, 2004, pp. 24-256 (with English translation).
- ____ 20 Y. K. Sin et al., *Laterally Coupled InGaAsP/InP Distributed Feedback Lasers at 1.5 μm for Chemical Sensing Applications*, Electronics Letters, Vol. 37, No. 9, April 26, 2001, pp. 567-569.

Examiner:

Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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- ____ 21 D.K. Serkland et al., *Amplitude Squeezing by Means of Quasi-Phase-Matched Second-Harmonic Generation in a Lithium Niobate Waveguide*, Optics Letters, Vol. 22, No. 19, October 1, 1997, pp. 1497-1499.
- ____ 22 A list of semiconductor lasers and their corresponding wavelength bands and other properties as available at time of preparing application and as identified as non-patent document 10 at pages 19 and 27 of the filed English translation of the present application.

References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initialed by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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Examiner:

Date Considered:

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CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that the following documents are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450, on the 14th day of October 2005.

- Transmittal for Information Disclosure Statement (3 pages)
- Information Disclosure Statement (2 pages)
- Form PTO-1449 listing 22 references (3 pages)
- A copy of 21 Non-US references listed on the Form PTO-1449
- Postcard

Respectfully submitted,


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